

CLAIMS

What is claimed is:

1. A sandwich-type drainage device comprising:
a first planar, membranous element comprised of a fluid-permeable filter fabric; and
5 a planar array of two or more adjacent, flexible, quasi-tubular stand-off members, the array manifesting an obverse face and a reverse face, said obverse face disposed on the first planar membranous element.
2. The device of claim 1, wherein a stand-off member of said planar array comprises an
10 in-line series of hoop devices, said series imputing to the stand-off member a two-degree of freedom flexibility.
3. The device of claim 2, wherein said hoop devices is an open loop and said in-line series comprising a coil.
- 15 4. The device of claim 3, wherein said coil is adjoined to another coil by means of a common longeron running between and integral with each coil.
5. The device of claim 2, wherein said in-line series further comprises a plurality of
20 parallel-arrayed, closed hoops in which each hoop of the plurality is joined periodically, and is substantially orthogonal, to at least one longeron common to all said hoops.

6. The device of claim 2, wherein said planar array further comprises two or more said stand-off members configured in an unobstructed, adjacent and parallel arrangement, including an optional, close-proximity, interleaved positioning.

5 7. The device of claim 2, wherein said planar array further comprises two or more said stand-off members configured orthogonal to each other.

8. The device of claim 1, further comprising an optional second planar membranous element overlain and adhered to the reverse face of the array of stand-off members.

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9. The device of claim 8, wherein said optional second planar membranous element is a continuum of said first planar membranous element and completely envelopes said planar array.

15 10. The device of claim 8, wherein said optional second planar membranous element is a non-permeable, non-biodegradable membrane.

11. A subsurface fluid collection and transport assembly comprising:

an essentially loose planar array of quasi-tubular, stand-off members, said stand-off
20 members each comprising a plurality of fixedly and axially aligned circular configurations that are made of strong, substantially non-biodegradable material, said array including at least two of said stand-off members disposed in an immediate, unobstructed adjacent relationship;

a planar geo-textile filter fabric overlying the stand-off members at an obverse face of the planar array; and,

a reverse side of said array supporting an optional covering comprised of a non-biodegradable membrane.

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12. The assembly of claim 11, wherein said immediately adjacent relationship includes an interlinking of two or more supports.

13. The assembly of claim 11, wherein said immediately adjacent relationship
10 comprises a parallel arraying of two or more supports including optional interleaving.

14. The assembly of claim 11, wherein said optional covering, when used, further comprises a particulate filter fixedly attached to the reverse side of said array and is a continuum of said planar geo-textile filter fabric.

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15. The assembly of claim 11, wherein said optional covering is a non-permeable, non-biodegradable membrane.

16. A fluid collection and removal system comprising a drainage article that features a
20 membranous, geo-textile filter cover overlying an obverse face of a planar array of multiple stand-off members, each of said stand-off members disposed in an unobstructed proximity with its adjacent member(s), and each said stand-off member comprising a

plurality of spaced and axially aligned hoop configurations that are made of strong, substantially non-biodegradable material.

17. The system of claim 16, further comprising another membranous cover overlying a reverse face of said planar array.

18. The system of claim 17, wherein said another membranous cover is a geo-textile filter fabric.

19. The system of claim 17, wherein said another membranous cover is a non-permeable sheet.

20. The system of claim 16, wherein said hoop configurations in each said stand-off member is joined periodically, and is substantially orthogonal, to at least one longeron.

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21. The system of claim 16, wherein multiple said hoop configurations of at least one said stand-off member are parallel-interleaved with the hoop configurations of at least another one said stand-off member.

22. The system of claim 16, wherein multiple said hoop configurations of at least one said stand-off member are cross-linked with the hoop configurations of at least another one said stand-off member.